

Winning the safety battle

A case study that demonstrates how a safety turnaround was achieved through solid leadership and whole team buy in

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This article presents a case study that details the safety journey at a large scale open pit operation. In support of ongoing operations, and to realise steeper slope design criteria, dewatering of the highwall required establishment of a drainage gallery from within the open pit. The highwall dewatering effort required trackless mining of a horizontal twin portal drainage gallery.

In addition, as part of a longer term feasibility study, it was necessary to recover and re-establish a shaft complex.

These two projects were tendered to a number of potential mining contractors and awarded through a standard commercial process. The contracts were awarded on a 'schedule of rates' basis, and an owner team project management delivery style was put in place to manage and direct the works.

Shortly after work commenced on both projects, safety incidents occurred that alerted mine management to the fact that the underground project safety performance was not aligned with the existing operation.

Throughout this paper, reference to two groups involved in the project is made. For clarity, the following definitions apply:

- project team – both the owner team and the contractor team
- owner team – the owner team only, consisting of management and field supervision.

Safety requirements

The owner's safety requirements were of a Tier 1 level (the level of safety operation expected of a major resources company), and given the longstanding open pit operation and strong safety culture, it was expected that the incoming underground project team would perform at an equivalent level with immediate effect.

During the commercial tendering process, the safety requirements were provided to the bidding contractors, together with compliance requirements. The safety requirements included site-specific standards and procedures, as well as corporate safety standards. These documents formed part of the formal executed contract.

Of note was that the operation did not have any recent significant underground experience or capability. With few exceptions, a fresh (external to the company) owner team was brought in to manage the project and provide contractor oversight.

Issues

Once the project was initiated, a number of issues became apparent that resulted in an owner reaction and subsequent rectification process between the owner and the contractor.

Incidents

Safety incidents occurred early on in both projects, and the level of incidents was

higher than expected at the initial stages of work. Four significant injury accidents occurred during the first 20 weeks of the project; these injuries were sustained within both contractor teams and were sufficiently significant that the persons involved required medical treatment up to and including days away from work.

At the outset, the requirement placed on the project team by corporate management was to maintain an overall injury frequency rate of no more than 2.55. These four injuries during the first 20 weeks of the project placed the project injury frequency rate at 2.88.

Consequently, it also reduced the owner's confidence in the ability of the contractor to execute the remaining project tasks safely. It is important to note that at this stage, the focus was on the contractor as being entirely responsible for the poor safety results.

Reaction

In support of the strong existing safety culture and performance, management's reaction to the incidents was firm. Mine management engaged with contractor management in a bid to improve safety performance and in doing so, a strong emphasis was put on the contractor to address the issues and hence rapidly improve safety performance. The general understanding was that the contractor had signed up to the safety requirements and expectations, hence the contractor could and would deliver on these.

Internally, serious discussions regarding the contractor's safety performance and whether the contractor should be retained were held. This resulted in the contractor effectively receiving a final warning and a threat of contract termination should safety performance not improve to the required level.

As an outcome from these discussions, a

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monthly safety-focused meeting between the owner team and the contractor management was agreed to. At this stage, the owner had a high expectation that the contractor would take it largely upon themselves to improve their safety performance.

Safety requirements

At contract award, a key assumption by the owner was that the contractor understood and would abide by all the safety requirements as issued in support of the commercial tender and contract award process. In turn, it was implied that the owner team would have sufficient knowledge of these requirements such that adequate supporting safety leadership could be applied.

As a result of the initial incidents and on a deeper investigation, it became apparent that the owner team had assumed that the contractor fully understood all of the requirements, as these had formed a basis of the contract. However, critically, the owner team themselves did not have an adequate understanding of the context and detail of all the requirements. They were therefore unable to provide adequate leadership to fill any voids in contractor understanding and application

that would help achieve the required level of safety performance.

It was also clear that the contractor had assumed that their normal safety culture would be adequate at this new project site.

The respective approaches by the two parties were shown to be a key error for both parties. The contractor's existing safety culture, and the owner team's knowledge, were well short of what was required.

Leadership

At the time of escalating incidents, the owner team leadership had levelled blame on the contractor management and team. To a large degree, the leadership excused themselves from responsibility, which resulted in a polarised project team and unnecessary animosity at a critical time. There were clearly shortcomings in the capabilities of both the owner team and the contractor. The owner team did not have adequate knowledge and understanding of the safety requirements to, in turn, lead and support the contractor.

Misalignment

A key issue was poor safety compliance across the project team, which, within a

pre-existing organisation with a very mature safety culture, resulted in serious tension stemming from misaligned expectations. Additionally, given the nature of carrying out underground projects within a large scale open pit operation, for the project team it was very much like working in a fishbowl: there was nowhere to hide and any sins were very quickly exposed, which in turn increased the pressure on the project team to rectify the issues.

The journey

Against the backdrop of the issues as described, the owner team's leadership embarked on a journey to address and steadily improve safety performance across both project sites. Given what had been exposed as key issues, it was decided to:

- implement a phased safety improvement campaign
- progressively develop an aligned understanding of the safety requirements
- achieve a sustainable level of compliance in the field.

This would be across all project team members and activities – with the end result of significantly improving safety performance. ▶



Ultimate success was very much a result of efforts by the whole project team.

The champions to lead this journey were initially the project leader and the safety manager; however, once the journey matured, ultimate success was very much a result of efforts by the whole project team. This made for a very pleasing team result, particularly in the face of intense scrutiny from the existing open pit operation generated by the initial poor performance.

Phase 1 – Seek first to understand, then to be understood

On initial review by the project leader, it was identified that a fundamental problem existed in the owner team not understanding the safety requirements, resulting in a skills deficit for this critical team. At this stage, the owner team was levelling blame on the contractor for poor performance without themselves having first examined how they had set things up and how they were leading the way. The reality of the situation, when honestly reviewed, was that the owner team was guilty of assuming that their imported safety cultures would be sufficient, while casting all blame on the contractor for the highly visible, poor project safety performance. Based on this finding, the focus was then to address the owner

team's shortcomings so that there could be no question regarding their ability to knowledgeably lead.

Phase 2 – Rectifying the owner team

The owner team consisted of a management level and field supervisors. With limited exception, this team had not been sourced from within the existing operation, but rather had been externally recruited specifically for this project. As such, the members of the team each brought their own safety experience and culture, and an expectation that the contractor's compliance with safety requisites would be automatic. With increased pressure due to the safety incidents occurring, the owner team very much regarded these as being the contractor's fault and that they could simply instruct the contractor to fix it. However, having actively given approval for and appointing the contractor, the owner was not justified in standing back and apportioning the blame. It was obvious in hindsight that the owner had made a number of incorrect assumptions and incomplete or inadequate assessments during the contractor adjudication process. At the time, these errors proved to be difficult to

acknowledge for the owner team.

It became apparent that the owner team did not fully understand the contractual safety requirements. Without a detailed knowledge of the safety requirements, the owner team were not able to coach the contractor on how to improve; they could only effectively issue instructions.

Together, the project leader and safety manager then set about providing the owner team with an understanding of the safety requirements. This consisted of holding focused discussions to provide the owner team with the context for key standards and the requirements for compliance. The aim was for the owner team to have the full background knowledge for them to be able to effectively coach, lead and enforce safety compliance across the project.

Phase 3 – Educating the contractor

In parallel with Phase 2, a similar exercise was carried out with the contractor. This engagement started with the contractor management alone and aimed to empower the contractor management team with a full suite of knowledge on the standards and how they should be applied. As with Phase 2, focused discussions were held with contractor management to walk them through all the requirements until an agreed understanding was reached.

In support of this phase, a formal monthly safety meeting was mandated. Only safety matters were discussed, and at each monthly meeting, one safety-related

focal point was introduced or reinforced. Introducing a single focal item each month allowed a manageable focus to be maintained, so that the team were not overwhelmed. As time went on, there was continued buy-in to this approach and at no stage did the contractor show unwillingness to engage.

Phase 4 – Ongoing reinforcement (and success)

Once both sides had been educated, it was then a matter of reinforcement. By this stage, the project leader and safety manager had the support of the project team leadership, where personnel were now significantly more knowledgeable in terms of safety. The reinforcement consisted of on-the-job safety engagements (more casual) and safety interactions (more formal) during field visits, and formal investigation of all incidents and accidents.

As can happen in these situations, there was fallout with personnel due to some parties not wanting to engage in mandatory requirements. This occurred in an instance involving senior personnel; however, the team moved on to achieve significant safety milestones

Throughout this phased engagement, no ‘formal’ process or high powered safety initiative was used; only direct leadership engagement by the project leader and safety manager to interact directly with the affected parties. Through their previous experience, their engagement was successful and achieved the required outcome – to educate, gain compliance and achieve required (and better) levels of safety performance. What started as a top-down process successfully became a whole of team engagement – one that all participants could take pride in. It should be recognised that for a number of people involved, this had required a significant personal turnaround.

Learnings

In the process of addressing the initial requirements for action/intervention and the subsequent journey, a number of learnings were apparent.

Engagement

The interface with the contractor was personal and focused. The project leadership team took responsibility and the existing operation/business had limited involvement, other than high expectations that the problems regarding the contractor performance would be

addressed one way or another. Initially, the fact that there was a real issue had to be communicated and the source of the problem needed to be determined. The initial focus was on the owner team; thereafter focus moved to the contractor. In reality, given the pressure to rectify, the engagement with the owner team and contractor had to happen in parallel. The process started from the top down, but successfully became a whole of team engagement and pleasingly gained contractor management’s full support.

Knowledge of safety requirements

It should not be assumed that once a formal contract is in place and formally executed, all requirements will be automatically understood. The owner had assumed that the bidder had fully understood the safety requirements. During the contractor adjudication process, the owner should test this presumption in order to ensure that there is a full and aligned understanding of the requirements. This needs to be robust so that on either side there can be no excuses, misunderstandings or misaligned expectations. With the benefit of hindsight, it was obvious that there was a large degree of responsibility on the owner for an incomplete adjudication process.

Personnel skills

Due to the fact that the owner team was made up largely by personnel who were new to the operation, and therefore did not have previous exposure to the corporate safety culture (as was the case with the contractor), both teams were equally lacking in a full understanding and appreciation of safety requirements. A significant shortcoming initially was that the owner team did not have the level of understanding and knowledge to lead and enforce safety compliance well. Without exception, it pays to first look internally to check that all is in order before laying blame externally.

Leadership

To initiate a robust, sustainable safety culture takes leadership and an initial top-down approach until there can be a broader buy-in across the team. In this instance, a key aspect to leadership was to first educate the teams, ie provide context and reasoning for the safety standards. Following that, at a steady and manageable pace, the use of and compliance to standards needed to be applied and reinforced by the leadership

team. A top-down approach was then gradually replaced by meaningful engagement across the whole team to buy in to and work together towards achieving a common goal.

Contractor support

Once successful turnaround was being achieved, the contractor sought to implement some of the safety systems elsewhere within their group at other contract sites – this was very symbolic of the contractor seeing value in taking ownership for the safety requirements. Based on a much improved level of support, the ongoing journey at site became much easier and workplace relations also improved.

Conclusion

From a very poor safety performance start on two underground projects, the team performance was turned around through a process of identifying key stumbling blocks and then initiating a methodical recovery process that ultimately led to sustainable improvements.

A significant outcome was demonstrated in the shaft rehabilitation team, which had no significant injury accidents during the remaining 84 weeks of the project task, allowing them to achieve in excess of one year without a lost time injury. The drainage gallery team had three additional injury accidents during their 80 weeks to project completion; however, these injuries were much less severe than the previous incidents. The overall project incident rate fell from an initially unacceptable level to an injury frequency rate of 2.35 – a reduction in the injury frequency rate of almost 20 per cent – which exceeded corporate management’s requirement to have an injury frequency rate not exceeding 2.55.

Of note was that the team achieved this performance turnaround without external assistance and without high-powered safety programs or engagements. The basis of the turnaround was:

- an initial top-down leadership focus
- honest identification of shortcomings
- re-alignment of the owner team as a priority
- systematic education and reinforcement of safety culture and behaviour.

The contractor did not object to any of the initiatives at any stage throughout this process; this was very significant in being able to achieve a meaningful improvement in safety overall. ■